AVIATION

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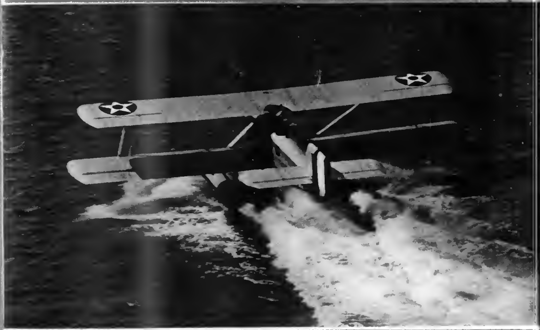

Navy CS torpedo scout (Wright T3 engine) in which Lieuts. Wead and Price made five new seaplane records

Official Photo. U. S. Navy

VOLUME XVII

NUMBER 3

SPECIAL FEATURES

NEW GOVERNMENT BIDS AND ORDERS
THE BRITISH AIR ESTIMATES ANALYSED
SIDE LIGHTS ON THE PARIS TO TOKYO FLIGHT
INTERNATIONAL REQUIREMENTS FOR AIRWORTHINESS

GARDNER PUBLISHING CO., INC.
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CONTENTS

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AVIATION

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A Continuing Air Program

EACH week one of the points in the suggested National Air Policy will be considered editorially. The first and most important requirement of any national policy is to have it clearly stated and then have it continue along certain definite lines until it has an opportunity to be given an adequate trial. So the first policy suggested was "A continuing program of aircraft development both governmental and commercial." This suggestion is so obviously necessary before any real progress can be made that it would seem to need little discussion, except for the fact that the United States has never had a fixed military policy and that it has allowed its national defence to be a structure of clay, molded by political expediency and untramed civilian guardians. For many years the officers of our Army have made every possible effort to secure some national military policy, but have failed until the Great War to have any plan which they could follow with any certainty as to its permanence

As to the naval policy, until the time of Roosevelt, it was about in the same condition, but owing to the necessity of planning in advance for a fleet a more definite plan has been obtained than in the Army.

When we consider a national air policy, the situation is worse than having no policy. While efforts are being made to coordinate the Army and Navy air service ideas by the Aeronautical Board, not even the officers of the Army and Navy in charge of our aviation would claim that either service now has any continuing policy. They are leading a year to year existence, never knowing what Congress will do the next fiscal year

To be constructive, the way to get a national air policy is for the War and Navy Departments to get together on their own differences on air matters, state a definite policy that they can urge Congress to adopt and then get all interests in aviation to get behind the program and have it adopted. This was attempted last year by the War Department, but the report has been pigeonholed somewhere and has never been made public. The most essential need today of American aviation is for the Aeronautical Board to formulate a clear National Air Policy, so that when it is considered by Congress it will not be neglected owing to differences of opinion in the services.

The March of Aeronautical Progress

IN these days of dawn to dusk and non-stop flights from coast to coast it is interesting to recall the first successful transcontinental flight from the Atlantic to the Pacific, for it gives an excellent measure with which to gage the progress of flying during the past twelve years.

The first coast to coast flight was made in the fall of 1911 by Calbraith P. Rodgers in a "32-foot one man model EX Wright biplane" from New York to Pasadena, Calif., in a total elapsed time of fifty-four days. Rodgers made sixty-eight landings en route and his longest hop was only 133 miles. The ship, a biplane equipped with a 35 hp Wright engine and with twin propellers driven through chains, "cracked up" so many times owing to forced landings that it was practically a totally rebuilt plane that reached the shores of the Pacific. The skill and the determination of the pilot in conquering the varied pitfalls which beset flying in those days can well be imagined, and his accomplishment deserves to receive some lasting recognition before it fails into total oblivion.

What then seemed a foolhardy and useless stunt to most persons has become a daily occurrence, now that a letter posted in New York in the morning reaches San Francisco via the Air Mail in the afternoon of the following day. Furthermore, the continent has been spanned in a non-stop flight by Lieutenants Kelly and Macready, and Lieutenant Maughan has now crossed it between dawn and dusk.

It is when we compare these latter day performances to Rodgers' gallant pioneer flight that we begin to see the true significance of the American and British round the world flights. Like Rodgers, these fliers are pioneers in a new field, and are laying the corner stones of the future greatness of air transport

Helium, Hydrogen and Sanity

CONSIDERABLE publicity has appeared in recent months for and against the use of helium for airships. As far as we have been able to discover, no one having the knowledge of airship operation is against helium except for specific purposes where its use would introduce more danger than it saves

In these arguments the same illustrations are invariably brought forth of the R38, the Roma and the Dixmude, but omitting to mention the fact that the R38 catastrophe was due to structural failure of the ship, the Roma due to collision with the ground, and the Dixmude due to shortage of fuel, there being no conclusive evidence in the latter case that fire had anything whatever to do with the loss of the ship

If these rare and unusual accidents are to be used as arguments, it should, in all fairness, be admitted that none of them were due to the use of hydrogen gas. In all three cases the ship would have been lost in any event, and in the last case the chances with the less efficient helium would have been decidedly less.

Why not be fair both ways and grant that helium in a fabric airship reduces the risk of fire, and makes it easier to save the crew if a fire should occur? Grant also that helium provides a cruising range of only one-half that that can be obtained from use of hydrogen. Aside from economic questions this is the whole story and furnishes a ready means for determining which to use for any particular purpose

Side Lights on the Paris to Tokyo Flight

Constructional Details of the Breguet 19A2 and of the 400 hp. Lorraine-Dietrich Engine

[illegible]ssful completion of the Paris to Tokyo Flight, in [illegible] seven days elapsed time, makes it now possible to estimate the technical value of this great performance. Owing to the fact that the flight was made from Paris to Hanoi, French Indo China, in the same airplane without changing the engine, it is this portion of Pelletier Doisy's itinerary which will be considered in particular

The following particulars regarding the Bréguet 19A2 plane were obtained by a correspondent of AVIATION from the Bréguet firm in Paris.

The Breguet 19A2 Plane

The Bréguet 19A2 is a single engined tractor biplane, which is almost entirely built of a new French magnesium-aluminum alloy called "duralm" This material is used not only in the framework of the fuselage and the wings, but also in the covering of the fuselage, except for the rear end and the covering of the wings, where it is fabric It will be remembered that Doisy had considerable trouble in India on account of the heat deteriorating the fabric of his wings. This seems to show that for tropical climates all metal construction is essential

The fuselage is built of tubular members which are assembled with stamped fittings by means of riveting, in place of welded steel fittings used on the earlier Bréguet planes The covering of the fuselage is of very lightly corrugated alloy and is riveted onto a false framework built up around the longerons. As a result of very careful detail work the fuselage has an excellent streamline from the nose to the sternpost The engine cowling blends into this *ensemble* so well that only the forward portion of the cylinder banks protrude from it Owing to the pointed shape of the nose, the propeller is not fitted with a spinner.

The wings are arranged in "sesquiplane" fashion, that is, the upper wing is much larger in span and chord than the lower wing In the mounting of the wings it is again evident that special pains were taken to reduce parasite resistance to a minimum The cabane consists of two oval posts in the center line of the machine, and there is only one interplane strut on each side of the fuselage, and these are inclined outward Ailerons, long and narrow, are carried on the upper wings only The wing has a fairly thick section, giving an excellent *L/D*

The landing gear consists of two streamlined struts, well inclined outward, which are braced to each other by a compression member, and are braced to the lower wing by tie-rods The wheels are "alpax" castings and carry a shock absorber device on the hub

The tail unit does not call for particular comment except that the structure is built up of duralm members and is covered with fabric. The stabilizer is braced to the sternpost on both sides by tierods The elevator is of the balanced type, but the rudder is not, nor are the ailerons.

The Lorraine-Dietrich Engine

The engine fitted in the Bréguet 19A2 is the Lorraine-Dietrich model 12DB 370-400 hp high-compression model, having twelve cylinders in V formation It is of the water-cooled type, and each block of six cylinders is set at an angle of 60 deg. The cylinders are cast in pairs, each pair being enclosed in a separate water-jacket, and are bolted to the aluminum crankcase through the agency of flanges formed at the base of the cylinders.

Inlet and exhaust valves are located in the cylinder heads, and are actuated by rocker arms operated by separate overhead camshafts. Each camshaft is driven from the crankshaft through a double set of bevel pinions and an intermediary shaft located at the rear end (that is, opposite the propeller end) of the engine and parallel to the cylinder axis. Camshafts and driving shafts are enclosed.

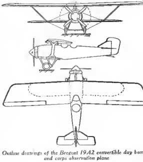
The crankshaft is of the six-throw type, the forward end projecting through the crankcase being formed to receive the conical propeller boss fitting

The connecting rods are of the concentrically articulated type, having a large bearing surface The crankcase is of aluminum, the lower portion forming the oil sump, and the lubricating pump, located in the bottom of the crankcase, is of the rocking-drum type without valve-flaps.

Cooling-water circulation is effected by means of a centrifugal pump, located at the lower rear end of the crankcase, below and driven from the crankshaft All water connections are very accessible

Two twin Zenith carburetors, of the spray and constant level type with altitude control, are employed. These are mounted low down on each side of the crankcase, the induction pipes passing up from the carburetors between the cylinders to the manifolds on the inner sides of the cylinders.

Ignition is by two high-tension magnetos driven by gearing off the forward or propeller end of the crankshaft The distributors are mounted on the ends of the camshafts. An engine starting system is provided, this being of the carburated air type, the distributor for which is mounted on the



Outline drawings of the Breguet 19A2 convertible day bomber and corps observation plane

end of one of the camshafts. Provision is made for driving the engine revolution indicator and the machine-gun control from gears mounted on the camshaft casings.

The following are specifications of the 400 hp Lorraine-Dietrich engine

Bore	120 mm (4.7 in.)
Stroke	170 mm. (6.7 in.)
R p m (maximum)	1 700
R p.m. (normal)	1 500-1 600
Maximum hp (at 1 700 r p.m.)	410
Weight (with starter airscrew hub)	410 kg (904.1 lb.)
Length overall	1 483 m (4 ft. 10 in.)
Width, overall	0 783 m. (2 ft. 10 in.)
Height, overall	1.029 m. (3 ft. 4 in.)
Gasoline consumption	240 gr (0.528 lb.) per hp./hr.
Oil consumption	25 gr (0.055 lb.) per hp./hr

The fuel tanks are made of sheet duralm. The cooling is obtained from an André honeycomb radiator of the retractible type which weighs, filled with water, 105 lb. Its frontal area is 332 sq in. and its capacity 3.7 gal

The specifications of the machine are as follows.

Span upper wing	48 ft. 6 in.
Span lower wing	36 ft. 4 in
Length overall	31 ft. 4 in
Total wing area	540 sq. ft.
Weight empty	2750 lb.
Weight loaded	5500 lb.
High speed	135 mi /hr
Cruising speed	120 mi /hr
Climb to 6500 ft	5 min
10 000 ft	7½ min
16 500 ft.	15 min
23,000 ft	40 min
Ceiling	24 400 ft.
Endurance (normal)	4 hr.

The above constructional details and specifications show that a very determined and apparently successful effort was made in the design of this machine to obtain maximum performance through a combination of excellent aerodynamic forms and new materials and methods of construction. While the specifications of the Duralm alloy are not known, it is understood that it is much lighter, all other things being equal than the more common copper aluminum alloy used in aircraft construction

Ten thousand miles covered in fourteen hops and 90 flying hours—The Breguet 19A2 day bomber (400 hp Lorraine-Dietrich engine) on which Lieut. Pelletier Doisy and Sergt. Bernard Besin (standing) flew from Paris, France, to Shanghai, China

Doisy's Long Range Machine

Coming now to the story of the Paris to Tokyo Flight, it is of interest to learn that the French air department projected last year to organize for 1924 a round the world flight for which two aviators were to be designated. In addition it was planned to have another aviator effect what was called a "rapid liaison" between France and French Indo-China Owing to financial difficulties, only the latter project has been carried out, but in order to give it a greater propaganda value, it was decided to let Doisy push on to China and Japan provided the equipment was found in serviceable condition upon being overhauled in Hanoi.

Although the first newspaper reports were to the effect that this was a "rough and tumble" venture with no preliminary preparation, this was not entirely accurate. While it is true that Doisy had no depots prepared for him where he could change his engine, so that he had to rely upon the same power plant for a flight of some 9,000 mi., on the other hand the French air department made arrangements with the countries Doisy was to fly over to give him the benefit of quick refueling and also weather forecasting services. All the governments concerned agreed willingly and it may be mentioned as another proof of American sportsmanship that our world flight expedition authorized the French flier to make use of the fuel depots laid out on our itinerary

The meteorological conditions of the route were very carefully gone into by the French air department as a result of which it was found that the most favorable season for making the flight extended from April 15 to May 15 The stopping places were selected primarily with reference to the cruising range of the machine, which led to the adoption of 760 mi. sections, except where practical considerations dictated a different course.

The plane selected was a stock model day bomber, taken from the general aviation reserve. In view of the large cruising range desired and virtual independence from ground assistance, the following modifications were made First, the bombing gear, which on the military machine is situated left of the pilot, was replaced by a fuel tank of 365 liters capacity, which, with the standard fuel tank of the same capacity, and a third tank of 210 liters, gave a total gasoline capacity of 910 liters, weighing 1450 lb Second, an additional oil tank of 100 liters capacity was fitted, making 130 liters in all; weight 200 lb Third, the machine gun and its turret mounting were removed and a hinged hatch cover with a small window on one side was substituted therefor This particular change naturally added to the speed of the machine, for in flight the mechanic would pull the hatch cover over his head so that the streamline of the fuselage only was interrupted, and that very slightly, by the pilot's cockpit It may be imagined that in the tropical latitudes the mechanics' place was rather warm and stuffy, as may be gathered from one of Doisy's letters, where he states that Besin is "un peu fatigué" In addition to the above changes, comfortable seats were provided for both pilot and mechanic, and a very comprehensive assortment of spare parts, together with a repair kit, were placed in a tool box The spare parts for the plane included the following: one wheel, four tires, four shock absorbers, two tail skids with shock absorbers, and one rudder The engine spare parts were as follows: One propeller, two carburetors, two oil pumps, two magnetos, and pistons, valves and spark plugs. In addition there was on board a small stock of sheet duralm and 600 rivets for repairs to the fuselage covering, with the necessary tools.

Thus equipped Doisy's Bréguet had a high speed of 135 mi./hr. and a cruising range of approximately 1400 mi at a speed of 120 mi /hr The safety factor is 8 as against 11 for the Day Bomber.

Practical Lessons of the Flight

It is interesting to note in the above log the great improvement in cruising range the post-war Bréguet 19A2, which was used as far as Shanghai, represents with respect to the Bréguet 14A2, the well known old war horse of 1918 While the average normal cruising range of the latter is only 300 mi with a 300 hp engine, the new Bréguet with the 400 hp Lorraine engine demonstrated in the Paris-Tokyo flight that

it has an average cruising range of about 750 mi. This figure has actually been exceeded on some of the legs. The first leg of the flight, from Paris to Bucharest, was unusually long, but this was largely due to a strong following wind. For the Paris-Karachi stretch, covered with clocklike regularity in six successive days, the average fuel consumption (gasoline and oil) works out as 1.06 lb. per flying mile for a cruising speed of 120 mi./hr.

This large increase in cruising range, together with an extremely low fuel consumption, obviously has considerable importance from the commercial viewpoint, particularly on airways where economical reasons make it desirable to fly long stretches without refueling. From this point of view Doisy's flight is extremely instructive, for it shows that an aerial express service could be operated on regular schedule over stretches of from 600 to 750 mi. without intermediate stops, provided a fresh plane would be used on each section as is the case on our transcontinental mail airway. With planes having the characteristics of Doisy's Bréguet the mail could be flown from New York to San Francisco in about 24 hr., a saving of almost half a day as against the schedule just inaugurated. This comparison is perhaps the most telling commentary on the technical lessons of the Paris to Tokyo flight.

Log of Doisy's Flight

Following is a brief log of Doisy's flight from Paris to Tokyo.

Apr.	24	Paris-Bucharest, Roumania	[illegible] mi.
"	25	Bucharest-Aleppo, Syria	[illegible] "
"	26	Aleppo-Bagdad, Irak	[illegible] "
"	27	Bagdad-Bushire, Persia	[illegible] "
"	28	Bushire-Bender Abbas, Persia	[illegible] "
"	29	Bender Abbas-Karachi, India	[illegible] "
May	3	Karachi-Agra, India	[illegible] "
"	2	Agra-Calcutta, India	[illegible] "
"	9	Calcutta-Rangoon, Burma	[illegible] "
"	10	Rangoon-Bangkok, Siam	[illegible] "
"	11	Bangkok-Saigon, Indochina	[illegible] "
"	13	Saigon-Hanoi, Indochina	[illegible] "
"	18	Hanoi-Canton, China	[illegible] "
"	28	Canton-Shanghai, China	[illegible] "
"	29*	Shanghai-Pekin, China	[illegible] "
June	2*	Pekin-Mukden, Mancharia	[illegible] "
"	3*	Mukden-Pingyang, Corea	[illegible] "
"	4*	Pingyang-Taiku, Corea	[illegible] "
"	3*	Taiku-Osaka, Japan	[illegible] "
"	8*	Osaka-Tokorozawa (Tokyo)	[illegible] "
		Total distance	12[illegible] mi.
		Total elapsed time	4[illegible] days
		Total flying time	12[illegible] hr.

*Some of these sections were covered with several intermediate stops en route, due to the much shorter cruising range of the Breguet 14A plane, a present of the Chinese governor of Shanghai, which Doisy used after he had crashed on the golf course of the latter place by running into a bunker.

The British Air Estimates

Their Clear Cut Presentation Offers a Good Model For Our Air Services

AVIATION has made a sincere effort to find out what the United States is spending on its Air Services and where the money goes. After weeks of work done in going through the maze of muddled figures hidden in odd corners of the *Congressional Record* or in carefully camouflaged "appropriations," and writing letters to those who ought to have them, we felt that though we had brought to light certain facts, we did not have a really clear picture of what we were spending our money for and that there were inconsistencies and omissions which made things very confusing. For example we could find no definite appropriation for the building of the Shenandoah yet we know that $10,000,000 had been spent on the Lakehurst development.

Figures are Intelligible

In startling and pleasurable contrast to this situation are the British "Air Estimates." The figures are so set forth that even a Congressman or an editor can readily grasp their meaning. An hour's study gave us a better idea of how the British were spending their aviation money than did years of study of hazy American figures. In other words, the American who is interested in the development of aeronautics spends his efforts and time searching after and trying to reconcile a confusion of figures. The British get figures that are understandable and which afford a basis for intelligent criticism and helpful suggestions.

For 1923-24 the British begin by giving nine general headings or classifications under which their expenses are voted. "Vote 1" is "Pay of the Air Force," $23,628,000.00; "Vote 2" is "Quartering, Stores (except technical), Supplies and Transport," $12,821,600.00, and so forth through the nine votes giving a grand total of $81,862,000.00. The total of each vote is further subdivided into sub headings. Thus, Vote 3 "Technical Stores (including experimental and research)" $24,613,000 has subheads from A to M. Subhead A for example is "Aeroplanes, Seaplanes, Engines, Spares" and gives in detail the amounts voted for complete machines, complete engines, machines spares, etc. Subhead B—$1,674,200—is devoted to the Royal Aircraft Establishment at Farnborough (which corresponds to our McCook Field) and gives the complete list of the staff and their salaries including civilians, materials used, etc.

The current year's vote is compared to last year's vote, and one gets the impression that an intelligent and successful attempt has been made to present the figures so that they are understandable. It is impossible to compare the British with the American expenditures as the American figures are so obscure. However, there are several salient differences in the apportionment of the appropriations. The British only spend some $1,674,200 on the main government experimental station, whereas we spend some $5,000,000 at McCook Field and at the Philadelphia Naval Aircraft Factory. The amounts spent with the manufacturers for service types of planes, motors and spares is $15,928,000.00—a much greater proportion of the total appropriation than ours. Votes 5 and 6, for the Air Ministry and Civil Aviation, are based on a different conception of aviation than prevails in this country. Vote 7, for the "Auxiliary and Reserve Forces," contains an interesting clause "Capitation Payments to Civil Companies for Training, etc. Courses $316,800.00.

Britain's Problem Simpler

The British Air Estimates are certainly worthy of study not only for the matter that they contain but for the manner of presentation. The British problem is somewhat simpler than ours as they have a single Air Force, but their system in a form modified to suit our needs would certainly be more intelligible than our present method.

The publicity given to these figures is in striking contrast to our secrecy. The pamphlet of 88 pages of figures is on sale at newsdealers and is available to all.

It is very interesting to look over the estimates for the air defenses of Palestine, Transjordania, and Iraq. Under the item of $15,928,000 for the purchase of aircraft and engines there is given the detailed cost of the complete machines, complete engines, machine spares, engine spares, etc.

Furthermore, it is probable that practically all the cost of the British aviation is shown in the Budget Estimates and one does not have to remain in doubt as to having overlooked some department of the government in arriving at a total cost.

This method of presenting the estimates is respectfully referred to the Lampert Aircraft Investigating Committee for suggestive inquiry.

International Requirements for Airworthiness

Categories of Machines Recognized—Standard Tests for Type Engines

Following are some interesting extracts from the Official Bulletins Nos. 4 and 5 of the International Commission for Air Navigation (C.I.N.A.) which was instituted under the International Air Convention signed in Paris, Oct. 13, 1919. The Commission deals with all such questions arising in international civil air transport as are not covered by the Convention.

Categories of Flying Machines

The provisions which follow relate to flying machines (heavier-than-air craft) which are "private or treated as such" and are referred to in Art. 30 of the Convention, that is to say all flying machines engaging in international navigation, other than military, customs and police flying machines.

The flying machines thus defined are divided into three categories, viz. Normal, Special and Aerobatic. Machines belonging to the first and second categories are limited to straight flying, with the exclusion of any evolution which might cause abrupt variations in height or in the attitude of the machine. Only machines belonging to the third category are allowed to perform such evolutions. Flights by machines belonging to the second category may be limited in each contracting state to certain areas and if necessary, to certain periods of the year. Restrictions which are thus made shall be brought to the knowledge of the International Commission for Air Navigation.

The first category, or normal category, is subdivided as follows:

(a) Public transport machines for passengers;
(b) Public transport machines for mails;
(c) Public transport machines for goods;
(d) Private machines;
(e) Air work machines.

The second category or special category is subdivided as follows:

(f) Racing or record machines;
(g) Research or experimental machines.

The third category, or aerobatic category, comprises the seven subdivisions contained in the first and second categories together.

Public Transport Machines

(a) (b) (c). The following will be considered public transport machines: Machines used by the owners thereof or their employees for carrying passengers, mails or goods on any journeys whatsoever for a remuneration of no matter what nature; any mixed machine, i.e. carrying under the foregoing conditions passengers and mails, or passengers and goods or mails and goods will be considered as to the first two—passenger machines, as to the third—a postal machine.

(d) The following will be considered private machines: All machines used exclusively by the owners thereof or their employees, whether for their own use or that of their friends, excluding the carriage of passengers, mails or goods for any remuneration whatsoever.

(e) The following will be considered air work machines: All machines used exclusively by the owners thereof or their employees for an industrial purpose other than the carriage of passengers, mails or goods.*

(f) The following will be considered racing or record machines: Machines which are built especially for the purpose of sporting or technical performances, to the exclusion of any other use whatsoever.

(g) The following will be considered research or experimental machines: Machines built especially for the purpose of experimenting in flight with regard to new apparatus and checking the results thereof, to the exclusion of any other use whatsoever.

Machines engaging in international navigation must have the category and subdivision in which they have been classified, mentioned in the documents carried on board.

No flying machine may be authorized to engage in international navigation, unless the type engines and the series engines, of which its power unit is comprised, have successfully undergone the tests hereinafter defined. These tests apply only to flying machines of the first category (normal) and flying machines of the third category (aerobatic), subdivisions (a), (b), (c), (d), (e).

Tests for Type Engines

Every type engine shall undergo the following bench tests in the following order. (1) First power test of 1 hr.; (2) Endurance test of 50 hr., in periods of 10 consecutive hours; (3) Second power test, same as the first; (4) High speed test of half an hour.

The average power developed by the engine in the course of the two one hour tests, converted to a pressure of 760 mm. of mercury in dry air and to a temperature of 15 deg. Cent. will define the international power of the type of engine under consideration.

This power shall be measured in horsepower of 75 kilogrammeters per second, and will be expressed as the nearest whole number of horsepower not exceeding the actual measurement for engines not exceeding 50 hp., as the nearest multiple of 5 hp., not exceeding the actual measurement for engines between 50 hp., and 200 hp., and as the nearest multiple of 10 hp., not exceeding the actual measurement, for engines exceeding 200 hp.

The average number of revolutions developed per minute in the course of the same two tests shall define the international number of revolutions of the type of engine under consideration. This number shall be expressed as the nearest multiple of ten, not exceeding the actual average.

The power that the engine must develop in the course of the endurance test shall be equal to at least 9/10 of the power obtained at the first test. The engine shall be adjusted to run at the number of revolutions developed in the first test.

No condition whatever as regards power is enforced for the high speed test, but the number of revolutions at which the engine must be adjusted to run during this test shall exceed the international number of revolutions by at least 5 per cent.

The two power tests and the high speed test respectively shall be carried out without interruption. Any interruption arising in the course of any of these tests, from any cause whatever, shall cancel that particular test.

Each of the five periods of the endurance test shall also be carried out without interruption subject to the following allowances.

One interruption per period will be allowed, provided such interruption does not last more than a quarter of an hour, and does not occur before the engine has been running 5 hr. Any test period in the course of which there occur, either several interruptions, or one interruption which is not in accordance with the preceding conditions will be cancelled.

Breakdowns — Repairs — Inspections

The authorities of the state in which the tests are carried out shall determine for each type of engine, which parts are considered of vital importance to the working of the engine and which parts, on the other hand, are subsidiary. No vital parts may be repaired or changed during the total duration of the tests.

Repairs authorized between the various tests and between the various periods of the endurance test may be, therefore, in connection with subsidiary parts only, they must, further, be carried out within a maximum period of 3 hr., comprising the hour immediately following the completed test or period and the 2 hr. which precede the commencement of the next test or period.

After the four tests, the engine shall be dismantled and the condition of its various parts shall be ascertained. No vital

*For instance, aerial advertising, aerial photography, forest patrol work, etc.—Editor.

A luxurious air liner—The Italian semirigid airship N1, shown landing in Fig. 2, has unusually comfortable accommodations. Fig 4 shows a private cabin, Fig 5 the passenger salon, and Fig 1 an engine nacelle. Capt U Nabile, designer of the ship, is shown in Fig 3

part of the engine may bear traces of fatigue or wear involving the necessity of altering or replacing such part. Only subsidiary parts may bear such traces

Additional Tests

Apart from the preceding tests and inspections every type engine shall undergo (1) A slow running test, (2) An inclined running test, (3) A thrust test

As regards the slow running test, the engine shall be adjusted to the international power and international number of revolutions, the throttle shall be gradually closed in order to reduce the number of revolutions until it is at the most equal to half the original number (dead slow) The throttle shall then be opened in order to return to the original speed

It shall be ascertained in the course of these operations that there is no stage at which the engine stops, or at which the number of revolutions varies inversely with the amount of fuel admitted It must be possible, moreover, to pass without difficulty in three seconds at the most from any one speed to any other within the aforesaid limits.

The inclined running test shall last at least half an hour, half thereof being at a longitudinal inclination of —15 deg to the horizontal and the other half at +15 deg, at varying powers and varying speeds, ranging from dead slow, as defined above, to the international power and international number of revolutions. The constructor may, however, be exempted from carrying out this test provided he shows that the general arrangement of his engine ensures satisfactory carburation and lubrication at all the inclinations included within the aforesaid limits

The thrust test shall only be enforced in the case of stationary engines; it may be combined with one of the endurance test periods, and shall consist of a run of a total duration of 10 hr. under the same conditions of power and speed as in the endurance test. During this test, the shaft of the engine shall be submitted to a thrust of 2 kg per hp. in the appropriate direction and under similar conditions to those involved in flight

Government Bids and Orders

The Standard Automatic Products Co. of Corry, Pa., (known to readers of AVIATION during the war as the Erie Specialty Co.) was the successful bidder on 28 lots of turnbuckles, under schedule 2210, Bureau of Supplies and Accounts, Navy Dept., for the Bureau of Aeronautics The bids were opened June 17.

* * *

The Engineering Division, Air Service, McCook Field, Dayton, Ohio, opened bids June 24, circular 124, for 120 supercharger parts, and under circular 122, for 24 H4 bomb racks

* * *

The Dayton Wire Wheel Co of Dayton, Ohio, was the low bidder on 1000 airplane wheels, 36 x 8, under Air Service Circular 133 The bid was received by the Air Service, Washington, D C., June 11

* * *

A bid was received by the Air Service, Washington, D C., June 12, for remodeling 100 aircraft compasses, type B to type B, inverted, and remodeling 400 aircraft compasses type B to type B-3, from the Pioneer Instrument Co, 754 Lexington, Ave., Brooklyn, N Y.

McCook Field No. 87, Bids and Awards—Bids received June 4, cir. 87, by the engineering division, air service McCook Field, Dayton, Ohio, for airplane

Item 1, drawings and data for one two-seater corps observation airplane, typeX, 2, wind tunnel test model, 3, 1 mock up of said plane, 4, designing, construction and delivery 1 plane, 5c, 1 set wings; 5b, 1 landing gear; 5c, 1 fuselage; 5d, 1 set elevators, 5e. 1 set rudders, 5f, 1 set ailerons, 5g, 1 stabilizer assembly; 5h, 1 set air control cables.

Douglas Co, item 1, $2,000, 2, $500, accepted, 3, $500, 4, [illegible]0,000, 150 days, 5a, $6,500, 5b, $1,300, 5c, $4,500, 5d, $55[illegible] 5e, $280, 5f, $850, 5g, $750, 5h, $550

Loening A E. Co., item 1, $2,200, 2, $450, accepted, 3, $2,[illegible], 4, $39,000, 120 days, 5c, $4,500, 5b, $1,500, 5c, $5,[illegible], 5d, $520, 5e, $370, 5f, $880, 5g, $480, 5h, $1,500 alt., item 1, $2,200, 2, $400, 3, $2,350, 4, $47,000, 120 days, 5c, $4,[illegible], 5b, $1,500, 5e, $5,500, 5d, $520, 5e, $170, 5f, $880, 5g, [illegible]180, 5h, $1,500.

Glenn L. Martin Co., item 1, $4,500; 2, $1,250, 3, $1,450, 4, [illegible]5,000, 6 months; 5a, $5,900; 5b, $900; 5e, $3,400, 5d, $40[illegible] 5e, $250, 5f, $800, 5g, $500, 5h, $650.

N MacQueen, alt., design submitted in conjunction with [illegible] mounts and description entered by Huff, Daland & Co

[illegible]mbert Co., item 1, $6,000, 2, $1,200; 3, $1,000, 4, $28,500 180 days, 5a, $5,500, 5b, $1,250, 5c, $5,500, 5d, $420, 5e, [illegible]20; 5f, $950, 5g, $510; 5b, $1,200

Curtiss A & M Co., item 1, $2,400, 2, $500, accepted, 3, $2[illegible] 4, $49,500 or $47,000, 120 days, 5a, $11,250, 5b, $1,800, 5c, [illegible]9,450, 5d, $900, 5e, $675, 5f, $1,350, 5g, $1,125, 5h, $1,[illegible]0.

Thomas Morse & Co., item 1, $700; 2, $250, accepted, 3, $40[illegible] 4, $43,000, 150 days, 5e, $7,500, 5b, $1,000, 5c, $5,750, 5d, [illegible]300; 5e, $175; 5f, $400, 5g, $275; 5h, $250.

Atlantic Aircraft Corp., item 1, $3,500; 2, $600, 4, $28,000, 30 days after receipt of equipment, 5a, $6,600, 5b, $1,500, axleless type, $650, axle type, 5c, $5,000, 5d, $350, 5e, $225, 5f, [illegible]475, 5g, $400, 5h, $575

Kirkhouse-Potts Co, item 1, $3,500, 2, $500; 3, $1,000, 4, $60,000; 5a, $10,000, 5b, $2,000, 5c, $8,000, 5d, $1,000, 5e, $500 5f, $1,000; 5g, $1,000, 5h, $1,500.

Aeromarine Plane & Motor Co, item 1, $12,000, 2, $1,000, 3, $2,500, 4, $60,000, 5a, $12,000, 5b, $1,500, 5c, $20,000; 5d, [illegible]800, 5e, $500, 5f, $1,200, 5g, $800, 5h, $800

G Elias & Bro, Inc, item 1, $5,000, 2, $750; 3, $2,500; 4, $47,000, 5a, $8,000, 5b, $1,000, 5c, $7,000; 5d, $700, 5e, $400, 5f, $600, 5g, $650, 5b, $800

Boeing Airplane Co, item 1, $2,000, 2, $1,000, 3, $2,000, 4, $40,500, 190 days; 5a, $6,000, 5b, $1,000; 5c, $5,000; 5d, $500, 5e, $400; 5f, $1,000, 5g, $500, 5h, $880

Cox-Klemin Co, item 1, $5,000, 2, $750; 3, $3,000; 4, $40,000, alt. $43,000, 4 months; 5c, $5,600, alt. $5,600, 5b, $800, alt $860, 5c, $3,200, 5d, $400, 5e, $200; 5f, $600, 5g, $500, 5h, $600

Huff, Daland & Co., item 1, $7,500; 2, $3,000; 3, $3,000, 4, $27,000, 4 months, 5a, $5,400, 5b, $1,000, 5c, $1,240, 5d, $360, 5e, $220, 5f, $540; 5g, $360, 5h, $810

McCook Field No 116, Bids and Award—Bids received June 13, cir 116 by the engineering division, air service, McCook Field, Dayton, Ohio, for 3 propeller hubs:

City Machine and Tool Co., Dayton, Ohio, item 1, $655; alternate for 2, $655.

City Engineering Co, Dayton, Ohio, item 1, $325 and $335, accepted, delivery 7 weeks.

Standard Steel Propeller Co, Pittsburgh, $700 and $750

National Steel Products Co., Dayton, Ohio, $379.80 and $379.80; 2% 10 days.

International Tool Co., Dayton, Ohio, $691

Steel Products Engineering Co., Springfield, Ohio, $550 and [illegible]585

Rock Island Arsenal, Rock Island, Ill., $396.

Air Service Awards—Awards made by the chief of air service, U. S Army, Washington, for miscellaneous supplies, bids for which were opened on dates indicated. Cir. 143, June 16

Institution Equipment Co., New York city, 1,000 lb. special cotton cord, $1.14.

McCook Field 123, Bids and Awards.—The following bids were received June 20 by the air service at McCook Field under cir 123 for 50 fuel cocks:

Gallaudet Aircraft Corp., East Greenwich, R. I., $13 25, 90 days; 1% 10 days, accepted.

Pioneer Instrument Co., Brooklyn, N Y, $17 50.

International Tool Co., Dayton, Ohio, $24.50

National Steel Products Co., Dayton, Ohio, $17, alternate, $15

Blanchard Instrument Co., Cambridge, Mass., $23.85, delivery 60 days.

Frankford Arsenal, Philadelphia, $28 67.

Balyeat, Jenks & Co, Cleveland, Ohio, $42 50

Allison Engineering Co., Indianapolis, Ind, $24

McCook Field Cir 118, Bids and Awards—Bids were opened June 24 by the air service, McCook Field, for rubberizing 2,500 yd. AA cloth;

Goodyear Tire Rubber Co., Akron, Ohio, 98c

B. F Goodrich Rubber Co., Akron, Ohio, $2.24.

U S Rubber Co., New York City, $1.52

Vulcan Proofing Co, Brooklyn, 95c, 21 days; 2% 10 days, accepted.

Bomb Sight Design Award—But one bid was received June 20 by the air service, McCook Field, under cir 414, for 1 complete developed design for the manufacture of bomb sight, viz., Sperry Gyroscope Co., Brooklyn, $1,685 The bid was accepted.

Helium Car Award—The chief of air service has awarded to the Bethlehem Steel Co. one helium tank car at $92,000, bids opened June 10, cir 127.

Air Service No 110, Bids—Bids received June 17, cir 110, by the engineering division, air service, McCook Field, Dayton, Ohio, for airship

Item 1, 1 one-man training airship, 2, 1 set Van Dykes of drawings.

Airships, Inc., item 1, $29,000, 150 days; 2, $9,150, 60 days.

Goodyear Tire and Rubber Co, item 1, $38,785, alternates $41,635, $40,075 and $42,995, 275 days; 2, $285, alternates $345, $285 and $345, 275 days.

McCook Field No 104, Bids and Award.—Bids received June 16, cir 104, by the engineering division, air service, McCook Field, Dayton, Ohio, for airplanes.

Item 1, 1 ambulance A1 plane; 2, 2 do; 3, 3 do; 4, 5 do, 5, 1 set Van Dyke negatives; 6a, 1 front upper spar truss, 6b, 1 compression rib, 6c, 1 front interplane strut

Cox-Klemin Aircraft Corp, item 1, $18,000, 2, $15,500, accepted, 3, $14,500, 4, $13.500, 5, $1,000, accepted, 6a, $1,000, accepted; 6b $100, accepted, 6c, $150, accepted, item 1, 150 days, 2, 210 days; 3, 240 days, 4, 280 days.

Barnhart Aircraft Corp, item 1, $40,000; 2, $32,500, 3, $25,000, 4, $20,500; 5, $5,000, 6c, $1,500, 6b, $200, 6c, $150; item 1, 180 days; 4, 240 days.

Boeing Airplane Co, item 1, $36,200, 180 days, 2, $27,800, 210 days; 3, $24,200, 225 days; 4, $20,720, 255 days; 5, $2,000, 6a, $2,000, 6b, $15, 5c, $125

The Douglas Co, item 1, $48,750, 2, $40,275; 3, $33,000, 4, $30,000, 5, $2,500, 6a, $200, 6b, $50, 6c, $60, 150 to 270 days.

G Elias & Bro, Inc, item 1, $40,600, 2, $32,500; 3, $27,500, 4, $22,500, 5, $4,000, 6a, $600, 6b, $60, 6c, $60, 200 to 360 days.

Huff, Daland & Co., Inc., item 1, $25,000, 2, $20,000, 3, $18,000, 4, $16,000, 90 to 200 days; 5, $5,000, 6a, $300, 6b, $25, 6c, $50.

Zenith Efficiency Cup

The second competition for the Zenith Efficiency Cup, held June 14 on the Paris-Lyon-Paris circuit—480 mi. in length—was won by Pilot Patin in a Caudron C27 tourist plane equipped with an 80 hp. Rhone motor This ship carried a useful load of 880 lb and its total fuel consumption for the 480 mi. distance was 316 8 lb

Pilot Bossoutrot, piloting a Farman parasol monoplane equipped with a 70-80 hp Anzani engine, won second place with a total fuel consumption of 172 lb., carrying a useful load of 462 lb

Five other contestants who started in the race were forced down owing to various causes, chief among which were engine troubles. The weather was altogether unfavorable, high winds and fog interfering with the ships.

New American Records

The following new American records recently established in accordance with F A I Regulations, have been authenticated by the Contest Committee of the National Aeronautic Association

CLASS C (AIRPLANES)
(Without useful load)

Altitude Lt. J A Macready, U S A S., LePere Biplane, Liberty 400 hp, (Supercharger) at McCook Field, Dayton, Ohio, May 21, 1924 10,741 m, 35,239 ft.

CLASS C (AIRPLANES)
(With 500 kgs. useful load)

Altitude- Lt. H R Harris, U S A S, U. S. Army TP1, Liberty 400 hp., at McCook Field, Dayton, Ohio May 21, 1924 8,578 m, 28,143 ft.

CLASS C (AIRPLANES)
(With 1000 kgs useful load)

Altitude Lt H R Harris, U S A S, U S Army TP1, Liberty 400 hp at Wilbur Wright Field, Dayton, Ohio, May 22, 1924 5,100 m, 16,732 ft

Duration Lt. H R. Harris, U S A S, U. S Army TP1, Liberty 400 hp, at Wilbur Wright Field, Dayton, Ohio, June 5, 1924 2 hr. 12 min 46 2 sec

In accordance with Art 120, F A I Regulations ("A record established by an aircraft carrying a certain useful load, is broken, in its category, when an aircraft carrying an equal or greater load makes a performance showing better results for distance, duration, speed or altitude, according to the nature of the record.") the following records have been authenticated:

CLASS C (AIRPLANES)
(With 500 kgs. useful load)

Duration Lt H R Harris, U S A S, U. S Army TP1, Liberty 400 hp, at Wilbur Wright Field, Dayton, Ohio, June 5, 1924 2 hr 12 min 46 2 sec

CLASS C (AIRPLANES)
(With 250 kgs. useful load)

Duration Lt. H R Harris, U S A S, U. S Army TP1 Liberty 400 hp., at Wilbur Wright Field, Dayton, Ohio, June 5, 1924. 2 hr. 12 min 46 2 sec

CLASS C 1 (SEAPLANES)

Duration—Lts. F W Wead and J. D. Price, Navy CS2 seaplane, Wright 585 hp, at Washington, D C June 22-23, 1924 13 hr 23 min 15 sec.

Distance—Lts F W Wead and J D. Price, Navy CS2 seaplane, Wright 585 hp., at Washington, D C June 22-23, 1924 1550 km, 963 12 mi.

Speed over 500 km—Lts F. W Wead and J. D Price, Navy CS2 seaplane, Wright 585 hp, at Washington, D C June 22, 1924 118 14 km /hr, 73 41 mi /hr

Speed over 1000 km—Lts. F W Wead and J D Price, Navy CS2 seaplane, Wright 585 hp, at Washington, D C June 22, 1924 119 54 km /hr, 74 28 mi /hr

Speed over 1500 km—Lts F W Wead and J D Price, Navy CS2 seaplane, Wright 585 hp at Washington, D. C. June 22-23, 1924 119 36 km /hr, 74 17 mi /hr

The flight was made over a 00 km course extending from Hains Point to Sheridan Point to Gunston Cove on the lower Potomac and return. The flight started at 12 16 10 p m, June 22, and finished at 1 39 25 a m June 23

Since these records, with the exception of Lieut. J A Macready's altitude record, exceed the present world records, the official reports have been forwarded to the International Aeronautic Federation with a request that they be authenticated as new world records.

Sadi Wins Beaumont Cup

The Commodore Beaumont Cup race, held June 23 at Istres, France, was won by Sadi Lecointe in a Nieuport-Delage model 42 sesquiplane equipped with a 600 hp Hispano-Suiza engine His time for the 300 km distance was 57 min. 50 sec, giving an average speed of 311 km /hr (192 8 mi /hr) Sadi, who was the only contestant to finish, did not land at the end of the sixth 50 km lap, but continued on another four laps, covering a distance of 600 km. in 1 hr 37 min 49 sec or 300 km /hr (192 7 mi /hr) He thus broke the world record made by Lieut. Alexander Pearson, A S, with 270 km./hr.

The race lost much of its interest owing to the withdrawal of the only foreign entry, the Gloucestershire racer Of the two other French entries, the 500 hp Salmson-Bechereau, piloted by Lieutenant Ferigoule, had to retire owing to radiator trouble, while the 300 hp Nieuport-Delage sesquiplane piloted by Lasne withdrew at the last moment. The race was postponed one day on account of the stormy atmosphere which prevailed on June 22, the date scheduled for the event.

American World Flight

The three American world fliers who had arrived at Karachi, India, on July 4 spent the next two days changing their motors The following is the schedule which carried them across Persia and Asia Minor to Europe

July 7 Karachi—Charbar, 330 mi., 4 hr 55 min; Charbar—Bendar Abas, 330 mi, 4 hr 5 min

July 8 Bendar Abas—Bushire 400 mi 4 hr; Bushire—Bagdad 475 mi., 6 hr 30 min

July 9 Bagdad—Aleppo, 480 mi

July 10 Aleppo—Konia—Constantinople, 585 mi.

July 12 Constantinople—Bucharest, 290 mi

July 13 Bucharest—Vienna, 300 mi

The day's lay over in Constantinople was caused by the desire of the Turkish officers to thoroughly examine the planes. The Americans have caught up almost two weeks on their schedule and are now only seventeen days behind their original plans. As far as Vienna they had covered 17 365 mi in 233 hr. 8 min during the 116 days of time elapsed since the start from Seattle The average flying speed has been 74.5 mi /hr., but the fliers have been going westward and have had the wind against them

British World Flight

Maj. Stuart Maclaren and his two companions flew on July 13 from Lake Kasumi, near Tokyo, Japan, to Minato, on the northeast coast of Honshu, a distance of 400 mi. He was once forced to return to Lake Kasumi owing to engine trouble, and to land twice en route after his second start because of thick fog, which made flying dangerous.

The British fliers have now reached the end of what may be called the Europe-Asia airway—from England to Japan—and they are entering that perilous trans-Pacific zone between Japan and North America where our world fliers had to overcome countless difficulties due to fog, high winds and lack of land marks, and where Major Martin was lost twice and finally crashed his ship

Lafayette Escadrille Memorial

Work has begun upon the cemetery garden in the forest of St. Cloud, France, which is to become the burial place of American volunteer aviators who fell during the war.

A committee of the Lafayette Escadrille of the French Army, in which most of the American volunteer fliers served, has appropriated 200,000 francs to create roads giving access to that part of the park where a monument, overlooking the City of Paris, is to be erected An admirable scheme for a landscape garden has been prepared by Alexandre Marcel, chief architect of the French government.

"The Mail Must Fly"

This famous slogan of the Air Mail Service was strikingly demonstrated on July 8, when Pilot Frank Yager, carrying the eastbound mail, was compelled by a hurricane to make a night landing at Chappel, Neb, 50 mi from Cheyenne The ship was wrecked and the pilot was shaken and bruised but the mail was soon afterward picked up by a mail plane which Jack Knight flew to the scene of the wreck from Omaha, and carried eastward. This mail reached New York only two hours behind schedule, although very bad weather with cyclone conditions was encountered en route.

AIRPORTS AND AIRWAYS

Cleveland News

By C. Caldwell

When Pilot Wesley L. Smith becomes a venerable old gentleman full of dignity and minor ailments he will be able to tell his grandchildren how he landed at the Glenn L. Martin Field Cleveland, at 2 39 p m. on July 1, way back in '24, completing the first lap of the trans-continental Air Mail, leaving New York at 10 05 and sliding the miles behind him at a rate of 105 mi./hr. Of course, by 1964 the grandchildren will be flying at 300 mi./hr. and will suggest very gently that W L retire behind his long white beard and not get it tangled in the prop as they take off Smith, flying the first section, carried 460 lb of mail and arrived ahead of schedule, followed by E Hamilton Lee at 2 59 piloting the second section with 80 lb of mail At Cleveland 25 lb were dropped and 30 lb enplaned

At 3 55 p m W D Williams took off for Chicago, carrying the first section consignment, while at 3 20 Art Smith followed, slightly delayed by the tardy arrival of the City Post Office mail truck. Between Cleveland and Chicago Smith made up the lost time, and the mail left Chicago right on schedule.

The transfer of mail and dispatch of the planes was handled smoothly and efficiently by the Cleveland organization under the experienced direction of H. B Shaver Learning that many people had written themselves letters to catch this first flight and not wishing to be out of fashion, I have mailed to the Postmaster at San Francisco to be returned to me by Air Mail an unpaid bill from my tailor, which I shall paste in my bill album and treasure as a souvenir of the flight.

On July 2 W D Williams arrived at 12 16 p. m., 4 min. ahead of schedule with the Eastbound San Francisco mail, and at 12 48 W L Smith swung off for New York on the last leg of the Eastbound Trans-continental flight. It is worthy of remark that the mail had been flown both ways on schedule time, with the exception of two delays at Cleveland, both of which were caused by the late arrival of the mail truck from City Post-office, and in no way attributable to the Air Mail organization. This delay was caused by an under-estimate of the time required for a truck to make its way through the heavy down-town traffic. In future ample time will be allowed for the truck to cover the 8 mi. of busy streets from Post-office to Martin Field

Tragedy and comedy have played their parts in Commercial Flying at Cleveland—the Lorain disaster and the Democratic Convention

At dawn of the day following the tornado that wiped out Lorain and caused over 200 deaths, P F Collins flew over the devastated city with a Cleveland Press photographer and from low altitudes secured several photographs of the ruins, which in their clearness and scope emphasized strongly the value of aerial photography. Prints of these photographs, with others taken in the city, were carried to Bellefonte by C H Ames and relayed to New York by Jim Ray, arriving there at 8 p. m. Art Smith carried the Pathé News camera man over the scene the following day and secured aerial panoramas, after which he landed the photographer to secure ground shots.

W L Smith carried the opening pictures of the Republican Convention to Cleveland for Pathé, while the writer flew the Glenn L Martin Commercial plane from New York to Bryan, Ohio with prints and zinc plates for Nea Service, Inc. At Bryan severe electrical storms and rain prevented a continuance of the flight to Chicago, so the remaining 160 mi were made by train, delaying delivery some 2½ hr However, the plates were in ample time for Chicago and vicinity morning paper editions.

Among recent aerial visitors at Glenn L. Martin Field were Major Rowell, U S M C., from Selfridge with Lieutenant Pond, U.S N; C. D. Tuska and P H Spencer of Hartford, en route to Kansas City, E A. and Mrs. Johnson and daughter, Alice, aged three years, of Dayton; and Lieut. J. B. Kneip, general inspector of naval aircraft at McCook Field, on a tour of inspection, from which the local Naval inspectors are slowly recovering

Wichita News

The Swallow Aeroplane Mfg Co of Wichita, Kan has sold a 1924 Swallow commercial three-seater to B L. Gattis of the G-V Motor Co, distributors of Ford and Lincoln cars The ship will be used by their service men for servicing Lincoln cars in the state of Oklahoma. This is a tribute to the airplane's success in the West, where distances are great and time must be saved

The racing Swallow "Miss Wichita" which will be a contender in the two-seater commercial event at Dayton next October

The Swallow Company has completed construction of "Miss Wichita" which will be entered in the two-seater commercial event in the Dayton Air Races This machine, shown in the accompanying photograph, has very clean lines and should prove a serious contender for commercial honors The engine is a Hispano-Suiza (information on its horsepower is withheld for the time being), and it is cooled by a single Lamblin radiator mounted between the landing gear struts

One of the entries of the Swallow Company in the Dayton races will be piloted by Ted Mollendick, who is probably the youngest pilot in the United States. He is only seventeen years old and was taught to fly last year by Walter H Beech, vice president and general manager of the Swallow Company. Mollendick's log book shows to date 100 hr. flying without any accident whatever.

Concord Aircraft Firm Active

The following interesting news was received from R S. Fogg, general manager of the Concord Aircraft Co of 65 North Main St, Concord, N. H, writing from The Weirs, N H,

"We have been barnstorming in Maine and New Hampshire for four years with land planes, but it is no longer a paying proposition Last year we began operating a powerful three passenger seaplane on Lake Winnepesaukee and business was excellent all season.

"We are here again for the summer, and business is starting in good We find that there are a great many people who will ride in a flying boat that will not go up in a land plane.

"We still maintain our flying field at Concord, where we have two ships for advertising, photography, fair work, etc."

Akron News

By Herbert Maxson

In an address advocating a sane and constructive policy governing commercial aeronautics in America, W B Stout, the Detroit aircraft manufacturer, declared that aviation was the biggest thing on the world's horizon at a joint meeting of the Akron chapter of the National Aeronautic Association and the Commercial Aircraft Association held Monday, June 30 in the dining hall of the Goodyear Tire & Rubber Co.

At the close of his talk Mr Stout presented three Akron South High school students, who were winners in the Inter-city model airplane contests with Chicago and Detroit entries on May 10 and May 31, checks for $50, $25, and $10. A large duralumin trophy, designed by Mr Stout and won by the miniature planes builders of the Akron school, will also be turned over to South High at the opening of the fall semester

H T. Kraft, chief aeronautical engineer of the Goodyear company who recently returned from an extended European trip, spoke on activities in aviation abroad, and Harold A. Kullberg, recently named president of the Commercial Aircraft Association, told of the purposes of the new group

Walter Wanamaker, an Allied flier during the war, and now attached to the Summit county prosecutor's office in Akron, stressed the need for national interest in the progress of aviation in this country.

Other speakers were C. Nelson Sparks, Akron postmaster who outlined the Air Mail service recently inaugurated, and M M Mell, president of the East Akron Board of Trade and president of the Akron Rotary Club, who served as toastmaster. A four reel film depicting the operations of the aerial mail service was then screened

Over 200 members of the two associations attended the dinner meeting

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The absence of a pin in the stick socket of his plane is believed to have been the cause of a fatal accident at Stow field, near Akron, Friday, June 27, which cost the lives of Howard R. Calvert, pilot, and a girl student, Miss Ewilda Wickersham, of Cuyahoga Falls

Calvert was one of the most popular fliers at the Akron aviation field and his death was a severe loss to the flying colony here. He had been active in the early organization of the Commercial Aircraft Association

* * *

Announcement was made last week by the Goodyear Tire & Rubber Co., of contracts received from the United States government for the construction of six airships, three of the TC type and three of the TA type, both of which have been developed by Goodyear engineers. In addition the company will build two TA and two TC envelopes, and two TA and two TC control surfaces

The TC ships will be 196 ft. long and have a gas capacity of 200,600 cu. ft. They will carry 150 hp Hispano Suiza motors and will have a cruising radius of 1,630 mi. and a maximum speed of 60 mi./hr

The TA type ships will be 162 ft. long, with a gas capacity of 130,000 cu ft. and the power units will be Curtiss engines developing 70 hp each

Work on the six ships will be started shortly, the material having been ordered

The new contract, with that for the RSI, the first American semi-rigid, now under construction in the Goodyear factories, comprises the largest lighter-than air award to the Goodyear firm since the war

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W. T. Van Orman and C. K. Wollam, the pilots of the balloon Goodyear III, an entry in the International Balloon races from Brussels, Belgium, last month, arrived in New York last week on the President Roosevelt.

* * *

V. C. Babcock, president of the Babcock Airplane Co., of Akron, and a director of the Commercial Aircraft Association, returned recently from a plane trip to principal cities in Indiana and southern Ohio

* * *

H A Kullberg, president of the Commercial Aircraft Association, will talk on his organization from a Cleveland radio station later in the month.

Dr George Madelung, formerly project engineer of the Glenn L. Martin Co, was an Akron visitor for several days recently. Dr Madelung will return to Germany to resume governmental duties later in the summer.

* * *

Hugh Allen, secretary of the Akron chapter of the N A.A., will return to Akron this week from a European trip

Seattle News

By Robert J Minshall

Captain Easterbrook recently visited Seattle on leave from Langley Field. As the Captain has had considerable experience in actual warfare and two-seater corps observation airplanes, the Boeing Airplane Co. was very glad to have his criticism on several corps observation mock-ups with which the company is studying corps observation arrangement. Several innovations in design and armament location were suggested, which will prove very satisfactory under service conditions

* * *

The erection of a rigid airship mooring mast at Tacoma, Wash together with other activities, seems to indicate that in the near future the Northwest will have the opportunity of seeing one of the large naval rigid airships. The prairie country south of Tacoma is ideal country for rigid airship operations, there being very few obstructions for a radius of fifteen or twenty miles. Nearly all of this country is included in the U S Army Reserve at Camp Lewis.

* * *

When the fleet assembles on Puget Sound this summer for naval practice maneuvers, they will be accompanied by a large aerial squadron

Seven H16 reconnaissance and bombing flying boats and seven Vought observation planes have left North Island, Calif. on an extended flight to Sand Point, Seattle, Wash. This squadron will be under the personal command of Capt. S E. Moses. An airplane tender will be anchored off Sand Point with full facilities for handling the air fleet operations.

Aerial Survey of Miami

Some time ago a contract was placed by the city of Miami, Fla., with the Aerial Department of Underwood and Underwood for an aerial survey of Miami and environs covering an area of 136 sq. mi The flying alone on this job will be equal to that of flying from Miami to New York and part way back and represents a period of time of about 40 flying hours. The finished map will be 11 x 14 ft. in size, with a scale of one inch equal to 600 ft.

The flying is furnished by the Florida Aviation Camp which is a Curtiss organization, the piloting is being done by Andrew Heermance

The map will be used principally by the city engineer and city commissioners in laying out a regular city plan as well as determining new city boundaries and street paving campaigns. To date the map is about one-third completed and has been produced by W L. Hamilton, Aerial Survey Department, Underwood and Underwood. Lewis McSpaden, one of the oldest and most experienced aerial photographers in the game today, is now on his way to complete the map and to produce other contracts that have already been closed.

The SCADTA Accident

The SCADTA, as the Colombian Air Mail Service is generally called, had a bad accident on Sunday, June 8 On account of a local festival one of the oldest pilots of the company, von Krohn, went joyriding over the town with a plane full of friends, six people altogether. The pilot dropped some leaflets and probably in looking down to see whether they landed in the right spot, he overbanked the machine while making a turn The ship began to slip and the pilot did not succeed in righting her again. She crashed on the roof of a house so violently that everybody was killed.

The report, current until now, that the machine caught fire while in the air has thus been proven untrue. The accident being solely due to careless handling of the plane while joyriding, hence the unique record of the SCADTA for having carried on a continuous air service without loss of passengers or mail for almost four years remains unimpaired.

New Airport for Detroit

A new airport for Detroit's commercial aviation activities is being built and furnished at Dearborn by Henry and Edsel Ford as an incentive to those working on metal airplane and airship construction in Detroit. The field, which is almost three-quarters of a mile square, is located at Dearborn on Oakwood Boulevard, just adjoining the new Ford Administration Building On it are being built, as well, factories for the Stout Metal Airplane Co, builders of the Air Pullman, and for the Aircraft Development Corp, which is working out plans for all-metal airships.

The new field has been furnished for these two companies as a civic development and as a national patriotic move, "there being no intention on the part of the Ford Motor Co, to go into the airplane business, other than to watch its development," according to an announcement given out by Edsel Ford. "We have followed the aviation development work that has been carried on by both the Stout Airplane and Upson Airship groups for some time," said Mr E Ford, "and believe that the results which they are obtaining justify every encouragement that Detroit can give toward making this the center of metal aircraft production."

It is planned to make this an ideal airport. It has the advantage of being only 25 min from the Post Office by motor car, and is near the Michigan Central Railroad, close to proposed street-car and bus lines, and an ideal location for commercial flying in and out of Detroit

The new airport is not meant to take the place of the establishment of a municipal landing field, but to be a strictly commercial development and the operating basis of air lines for aviation companies coming into and out of Detroit. Twenty-five tractors are now at work in the area, levelling it off and preparing it for actual flying work within the next thirty days, while contracts have been signed for the new factory buildings which will house the Aircraft Development and Stout groups; and also the operating companies later to be formed will center their activities at this field.

Ralph Upson, who is at the head of the Aircraft Development Company's airship work, was most enthusiastic about the new field and its possibilities. "In all our experimental work to date, here in Detroit, and even in our previous activities, we have been handicapped by lack of space and facilities for the proper handling of new problems. I believe with this airport once established, our work will progress on a far more definite basis than would be possible otherwise, and will enable us to carry on, in Detroit, work which otherwise would be done in other cities where larger landing space is available and climatic conditions more ideal."

Possibly more immediately affected is the work of the Stout Company with its flying activities actually started. "A more patriotic thing could not have been done, toward bringing aviation not only to Detroit as a manufacturing center, but to America as a means of peaceful national defense," was Col Sidney D Waldon's comment regarding the new field.

Flying has become a basis of conversation in Detroit, but differing from other air centers, Detroit's talk is all of commercial flying, and little reference to military flying Air circles there are not looking for government contracts or assistance from Washington, but rely for the future on the actual earning capacity of freight and passenger aircraft over definite airlines.

Among other Detroiters who expressed their appreciation of the establishment of the Ford field at Dearborn was Harold Emmons, president of the Board of Commerce, who said "I believe this is the greatest single establishment that could be made toward bringing the aircraft industry to Detroit, and is of much greater value because it is a commercial move, rather than municipal. The greatest credit is due to those who have made the establishment of this field possible."

N.Y.U. Aeronautics Class Graduated

The first graduating class in aeronautics at New York University met with a cordial reception at the hands of the aviation world. The members of the class deciding on aeronautics as a career have, a few weeks after graduating, all been placed in suitable positions.

Messrs. Bachrach and d'Heedene have qualified for appointments at Langley Field with the National Advisory Committee; Mr Schwendler is obtaining a valuable training under Grover C Loening, who has in many ways rendered service to the University; Mr Lederer is acting as assistant in the newly erected wind tunnel; Mr Boesch has entered on the highly promising work of installing beacons and landing lights with the Air Mail; Messrs. Betancourt and Contini are with the Curtiss Company

The policy of the University is to admit only a few selected men to the aeronautical option in the Department of Mechanical Engineering, and to insist that they must be prepared to start at the very bottom of the ladder, and not expect rapid promotion in a pioneer and struggling industry This policy is seen to be fully justified

Aeronautics graduation at N. Y. University—Front row, J. Lederer, R. Contini, A Klemin, associate professor of aeronautics; Prof C. P. Bliss, head of the department of mechanical engineering; Wm Schwendler, C S Stevenson. Back row, W Boesch, G. Betancourt, M Bachrach

Thanks are due to the Aeronautical Chamber of Commerce for cooperation in suitably placing the graduates.

Air Meet at Aberdeen, S. D.

Arrangements are being made for a meeting at Aberdeen, S D, on July 25 and 26, of the aviators of North and South Dakota. This is to be a convention of aviators, and in connection there will be races and an exhibition for the public. There will be a race for American and Canadian Jennies, another for planes under 100 hp and a third for planes of 100 hp and over Wing walking, parachute jumps and night flying are also on the program Small prizes will be offered for the races and a prize will be given to the aviator who flies the longest distance in coming to the meet.

The Aberdeen Commercial Club is back of this affair—both morally and financially—and we are anxious to have every aviator here with his ship.

A big banquet is planned for the aviators to take place on July 25.

Newspaper Air Service Starts

A daily airplane service from New York, the sole purpose of which is to provide New York morning papers for the guests of The Balsams at Dixville Notch, N H, was started July 1 from Garden City, L. I. By this method newspapers reach Dixville about 9 a m. of the morning on which they are published instead of the late afternoon of the day following, as they do by train.

The service is operated by the J J. Lannin Co., which owns the Garden City Hotel as well as The Balsams. The service was operated last year, but this year a landing place has been provided on the grounds of the hotel at Dixville Notch, the newspapers having been brought from a more distant point last year. Three aviators and three planes constitute the service corps.

The planes used are Curtiss Orioles with 160 hp Curtiss C6 engines.

UNITED STATES AIR FORCES

U. S ARMY AIR SERVICE

Army Air Orders

First Lieut. George G Lendberg, A S, Scott Field, to Prim. Fly School, Brooks Field

First Lieut. Michael F. McHago, Philhps Field, to Prim Fly School, Brooks Field

First Lieut. Bernard S Thompson, A S, enroute to U. S from Foreign Service in P. I., to sail from San Francisco on Aug 21, for New York City, and thence to Langley Field

Sec. Lieut. Harry C. Wisehart, A.S, Marshall Field, to San Francisco, sailing July 2, for Honolulu.

First Lieut. Roger S McCullough, A S, Balloon & Air School, Scott Field, upon completion of instruction, to Prim. Fly School, Brooks Field.

Lieut. Col Harry Graham, A S., upon completion of instruction at A S Tact School, Langley Field, to duty at that station

First Lieut Albert F Hehhard, A S, Scott Field, to Balloon and Airship School, that station, for instruction

First Lieut. Francis B Valentine, A S., Mitchel Field, to Supt U S Mil Acad, West Point.

First Lieut. Dache McC Reeves, A S., Chanute Field to Kelly Field

Sec. Lieut. Thomas D White, Inf, detailed to A S., from Panama Canal Dept, transport sailing Aug 28, to Com. A. S Prim. School

Orders June 12, amended to direct First Lieut. William B Souza, A S, to proceed, after expiration of leave, to Kelly Field

Capt. Harold M McClelland, A S, Camp Alfred Vail, upon expiration of leave, to Mitchel Field

First Lieut Hugh C Downey, A S, from duty as Procurement Plan. Rep, Dayton, to Eng School, McCook Field.

Capt. Donald Wilson, A S., Kelly Field, upon expiration of leave, to Chief A S, Washington

Maj Alfred H Hobley, A S, McCook Field, to duty as Procurement Plan Rep, Dayton

Orders April 26, First Lieut. Clements McMullan, A S, amended to read to take effect Sept. 10

Orders April 24, Capt George E Stratemeyer, A S, amended to assign Captain Stratemeyer to duty at U S M A, West Point, Captain Stratemeyer to be placed on detached officers list.

First Lieut Talcott P Smith, A S, Bolling Field, upon expiration of leave of absence, to Chanute Field

Maj Benjamin G Weir, A.S, upon completion of foreign service, to Fort Riley

Capt. Freedrich L. Eglin, A S, upon completion of foreign service, to Kelly Field

First Lieut Clifford C Nutt, A S, upon completion of foreign service, to Kelly Field

First Lieut Arthur G Lagget, A S, Selfridge Field, upon expiration of leave, to temporary duty at Crissy Field, pending departure of transport sailing from San Francisco, for P I, Oct. 15

Designation of Lieut. Col Harry Graham, A S, as Commandant A S Tact Sch, Langley Field, announced

Capt. Roland Winfred Wittman, Inf, transferred to A.S., with rank from July 1

Sec Lieut Leslie P Holcomb, 12th F Art., Fort Sam Houston, detailed to A S, to Commandant A. S. Prim Sch, Brooks Field

Maj Henry H Arnold, Rockwell Air Int. Dep., Rockwell Field, to Chief A S, Washington

Capt. Thomas J. Hanley, Jr., Crissy Field, to Chief A. S, Washington.

Resignation by Sec. Lieut. Robert Scales Clary, A.S, of commission as officer, accepted.

Lieut. Col John H Howard, A.S, Kelly Field, upon expiration of leave, to Com & Gen Staff Sch., Fort Leavenworth.

Orders April 26 amended to read: First Lieut. Franklin O Carroll, A S, McCook Field, to Fairfield, Ohio, temporary duty 88th Squad. A.S. Upon expiration of temporary duty July 15, and any leave granted, to Kelly Field.

Sec. Lieut Lyman O Williams, 10th Inf, Fort Thomas, detailed to A S, A. S. Prim Fly Sch, Brooks Field.

Sec. Lieut Charles C. Higgins, 10th Inf, Fort Thomas, detailed to A S., A S. Prim Fly Sch, Brooks Field.

First Lieut. Louis C Simon, Jr., A S, Selfridge Field, to Com Off, Walter Reed Gen Hosp, Washington, D C, for treatment.

Orders May 1, Sec. Lieut. Paul H. Kemmer, A S, to Hawaii on transport sailing San Francisco, Aug 2, revoked Lieutenant Kemmer, relieved from duty Chanute Field, to proceed to Fort Riley.

Ford Liberty Motor has Long Life

Recently workmen at the Rockwell Air Intermediate Depot, Coronado, Calif, were surprised when opening a crate containing DeHaviland 4A No. 31084, built by the Dayton-Wright Co, to find installed therein Ford Liberty 12A No. 29494, Ford No 1. This engine was the first Liberty the Ford company turned out and was completed July 18, 1918.

Maj H H. Arnold, Commanding Officer of the Rockwell Air Intermediate Depot, witnessed the final test of this engine early in 1918 and received it at this depot after it had traveled from Detroit to France, arriving there too late to take part in bringing down the Huns From France it was re-shipped to the United States and then shipped to the Philippines From the Islands it was re-shipped to Rockwell Field and has remained in storage since its arrival. As far as can be determined, this engine has never had any time in the air Its entire time since coming off the test block at Detroit has been in crates, although it has traveled a distance equal to the circumference of the globe

Primary Flying Training not a Sinecure

According to the Training Report just released by the Officer in Charge of the Flying Office at the Primary Flying School, Brooks Field, San Antonio, Tex, the present class now contains some 113 members. Of these 25 are regular army officers, 74 flying cadets, six enlisted men taking cadet training, and eight others The "eight others" are seven National Guard officers from the States of Tennessee, Indiana and Minnesota, and Lieut.-Col Juan E. O'Connor, of the Peruvian Army. The latter is taking our flying training in preparation toward establishing similar methods of training in his own service.

The expression "contains some 113 members" as above is used advisedly, for the "Benzine Board" is functioning with its usual freedom, 11 officers, 26 cadets and 2 others having already felt the sweep of the "washout" broom.

Engineering School Students Study L.T.A.

Maj John F Curry, Capts. L. A Walton, Edward Laughlin, W B Mayer, 1st Lieuts B R. Dallas, Alex Pearson, Jr., H R. Wells, W R. Fletcher and R. C. Coupland, student officers of the Air Service Engineering Division at McCook Field, Dayton, Ohio, left recently for Scott Field, Belleville, Ill., to take up a condensed study of Lighter-than-Air activities in connection with their course in general aeronautical engineering pursued at McCook Field. From Scott Field they will proceed to the Technical School at Rantoul, Ill, for study and lectures. They are to be absent not longer than ten days when they will report again at the Engineering Division to complete their course of study there.

Aerial Exhibition at Baltimore

On May 30, Decoration Day, the usual aerial exhibition was held at Logan Field, Baltimore, Md The 49th Aero Squadron, stationed at Phillips Field, Aberdeen Proving Grounds, Md. took part to the extent of sending three NBS1 planes and two DH planes to Logan Field to augment the number of planes in the air Lieutenants Bleakley and Barker and Staff Sergeant Davis were the pilots of the NBS1's and Lieutenants Bond and Herbert flew the DH's. The NBS1's went direct to Bolling Field to secure smoke bombs, which were dropped at the exhibition with excellent results, four bombs making direct hits. Sergeant Nero was the bomber. Private Chas E. Surdam and Staff Sgt A. L. Elstner made parachute jumps. It was Sergeant Elstner's first attempt and he met with a little hard luck, as he sprained his ankle making a hard landing

Lieut. Goldsborough's Sky Writing Flight

The 4th Observation Squadron, Wheeler Field, Schofield Barracks, H T, has an expert sky writer in the person of Lieut W C Goldsborough, who acquired fame for himself and the gallant 4th by helping the Army "lick" the Navy in the annual football classic at Honolulu.

Lieutenant Goldsborough, with the aid of Lieut. Patrick Powers of the Chemical Warfare Service, rigged up a smoke tank in the rear of his trusty DH and wrote the letters "A R M Y" in big type over the field immediately preceding the struggle, thereby striking consternation in the morale of the Naval rooters. Maj Gen Charles P. Summerall, Commanding the Hawaiian Department, commended Lieutenant Goldsborough for his versatility and skill.

Kelly Field Training for Bombing Competition

Extensive preparations are being made to conduct individual practice in low altitude bomb dropping in preparation for the annual competitive aerial machine gun and bombing matches to be held at Langley Field on Oct 8 The preliminary tests at Kelly Field indicate that the competition will be keen, and considerable accuracy is hoped for upon the development of a special sight for low altitude bombing which is being developed by some of the experimental experts of the Third Attack Group.

General Mitchell's Return

Brig Gen William Mitchell, Assistant Chief of the Army Air Service, who is honeymooning in the Philippines, is expected to leave Manila the latter part of July for the United States.

General Mitchell, while in the Orient, greeted the round-the-world fliers, having met them in Japan It is reported that while in India General Mitchell bagged seven tigers and Mrs. Mitchell two.

U. S NAVAL AVIATION

Naval Air Orders

Gun George L. Hart, det. U S S Aroostook, to Naval Air Sta. San Diego, Calif.

Lt (jg) Thomas J Bay, det Nav Air Sta.; Pensacola, Fla. to U S S Aroostook.

Ens John H Leppert, det U S S California, to temp duty under instr in aviation, Nav Air Sta., Pensacola, Fla.

Lieut William M Fellers, det. Bu of Aero, to continue duty involving flying with the U S Flt

Lieut Junius L. Cotten, det. Aircraft Sqdrns. Battle Flt.; to U S S Mississippi involving flying

Lieut Charles L. Hayden, det Aircraft Sqdrns. Battle Flt.; to U S S Mississippi involving flying

Lieut Conrad A Krez, det. Aircraft Sqdrns. Battle Flt.; to U S S Arizona involving flying

Lieut DeWitt C Watson, det Aircraft Sqdrns. Battle Flt.; to U S S Omaha involving flying

Lt (jg) Thomas G. Richards, det Aircraft Sqdrns., Battle Flt., to U S S Idaho, involving flying

Lieut. John C. Williams, det. Aircraft Sqdrns., Setg Flt.; to Naval Air Sta., N O B Hampton Rds., Va.

Lt (jg) Horton I Booker, det. Aircraft Sqdrns. Setg Flt; to Naval Air Sta., N O B Hampton Rds., Va.

Lt. (jg) Clarence M Head, det. Aircraft Sqdrns. Battle Flt., to U S S Tennessee

Comdr Ben D McGee (SC), det. Nav Supply St, N.O B., Hampton Rds., Va, to Aircraft Sqd Setg Fleet.

Lieuts F. W Wead and J. D. Price, U.S.N, who made five new seaplane records on June 22-23 in a Navy CS torpedo scout *(See p. 780)*

Lt. Comdr. Elwood A Cobey (SC), det. Aircraft Sqd Setg Flt; to Navy Dept.

Gun. George W. Almour, det. Nav Air Sta., Lakehurst, N J, to U S S Shenandoah involving flying

Reserve Naval Air Activities

The Aviation Division, Third Regiment, Ninth Naval Brigade, United States Naval Reserve Force located at Cleveland, Ohio, has twenty-three enrolled men taking the Student Naval Aviators training course

Ens. Richard R Palmer, U S N R F.5, commanding officer of the division reports that good progress has been made in the ground school course. The following Student Naval Aviators Seamen 2d class, U S N.R.F-6 have been ordered to flight training duty for forty-five days at the U. S Naval Reserve Air Station, Great Lakes, Ill, starting July 1 Ernest F Jones, John P. Schaefer, Walter B McClelland, Arthur C Lechner, George H Rose, William J Welsh

Ens. R G. Sharrick, U S N R F-6, of the local Aviation Division has just completed fifteen days training at Great Lakes and reports that training conditions and equipment are fine

Ens. H E Horn, U S N R F-6 of this Division has received orders to report to Great Lakes for fifteen days flight duty starting July 15

CALENDAR OF AERONAUTICAL EVENTS

March 25.	Start of the British World Flight, Southampton, England.
April 6.	Start of World Flight of the U. S. Army Air Service, Seattle
August.	"Tour de France des Avionnettes." International Round-France race for light airplanes.
Oct. 2-4.	International Air Races, incl. Pulitzer Trophy Race, Dayton, Ohio.
Oct. 24-25.	Schneider Cup Race, Baltimore.
Dec. 17.	Twenty-first anniversary of the first successful airplane flight.

Oil Conservation and Aerial Survey

As a step forward in the oil conservation policy of the Government, Navy planes will map the Naval Petroleum Reserves Numbers One and Two in Southern California, provided for in a project recently approved by the Secretary of the Navy. In addition to being important from a conservation standpoint, this work will be of great value to the Geological Survey of the Department of the Interior in the geological and topographical surveys of this region.

Planes from the Naval Air Station at San Diego, Calif., will be used in this work by Navy photographers, using specially constructed cameras for aerial mapping. Photographic aerial mosaic maps will be made of both the Reserves, and will show with accuracy and the greatest possible detail the exact progress of drilling and of the development work being undertaken for the purpose of extracting oil for the use of the ships of the Navy. By showing each well in its relation to all the others a complete check on the conditions in the oil fields can be obtained and will provide information necessary to insure the most scientific and least wasteful methods of drilling for the oil.

Specially constructed cameras will be mounted in the floor of the body of each plane used for this work and photographs will be made at regular and frequent intervals as the plane flies back and forth over the territory to be mapped, following a prearranged course. When developed and printed the photographs will be pieced together, the finished map being a photograph of the area covered, all parts of the map being in the same scale. The eye of the camera misses nothing, with the result that a photographic map contains many important details that are impossible to get in a ground survey. Not only this, but an aerial survey can be made in a fraction of the time required for a survey by the usual methods.

Aerographers School Moved

The Naval Aerographers School at Pensacola has been closed, but the Aerographers School at Anacostia will be placed in commission in August. All men eligible for change to Aerographer rating have been transferred. Future requirements of this branch will be filled through the lowest rating, Aerographer, Third Class, by qualification after a course of instruction at the school at Anacostia.

Publisher's News Letter

The news of the abandonment of Amundsen's Arctic flying expedition this year will have caused more than one official in our Navy Department to heave a great sigh of relief. As a matter of fact, the more details become available regarding this extraordinary venture, the more they seem to justify the doubts we expressed as to the advisability of having an American Naval pilot participate in this flight in an official capacity.

We remarked at the time that it would be rather odd if an American pilot, flying a German-designed and Italian-built plane equipped with British engines and French radiators should plant the Norwegian flag on some Arctic territory which may perhaps turn out to belong to Denmark. Judging from recent newpaper reports, it now even seems questionable if the American pilot would have had a chance of planting any kind of flag on the Pole or on any ice hummock adorning its vicinity.

* * * *

Roald Amundsen is an explorer of international reputation. But he is also a patriotic Norwegian. This is but natural of a man who planted the Norwegian cross on the Southernmost part of the Globe and who wrote an imperishable page of nautical history with his circumnavigation of the Northwestern Passage in a 40 ton auxiliary cutter. How good a patriot Amundsen is in reality, appears from the fact that after Mussolini had agreed to Italy's official participation in the Polar flight, and had furnished the explorer with a third plane and the necessary crew, the explorer refused point blank to let the Italian plane display the Italian national insignia. Only the Norwegian cross would do. But Mussolini, who is no amateur in the game of securing national prestige, would not hear of this, and so the expedition came to a deadlock, even before financial difficulties sent it on the rocks.

But, suppose that Amundsen's plan had worked out as it was planned. The three machines would have started out from Spitzbergen for the Pole—one with a Norwegian crew, one with an American crew and one with an Italian crew—and all under the Norwegian flag. At the Pole the ships would have landed and one plane would have been left behind after it had transferred its remaining fuel to the plane destined to fly on to Alaska, while the third plane would have returned to Spitzbergen carrying the crew of the sacrificed plane. Now, in view of Amundsen's patriotic feelings, and the fact that one of the planes would have had a Norwegian crew, it is hard to imagine that the explorer would have sent back his Norwegian crew with the Italians to let the American pilot have the glory of the flight to Alaska and the possible discovery of the "lost Arctic continent." In all likelihood, this flight would have been attempted with an all-Norwegian crew, and the Americans and the Italians would have been sent back to Spitzbergen with many thanks for their valuable convoy work.

This little story merely goes to show that European governments frequently display more acumen than our own when it comes to safeguarding national prestige.

* * * *

We wonder what the great store of Gimbel's, who sponsored the Amundsen expedition to the extent of full page advertisements in the newspapers, radio talks and various other forms of publicity, is going to do to square its over enthusiastic claims with the collapsed project. Many thousands of persons bought post cards to be carried on this trip at one dollar each. Out of each dollar there was probably taken the cost of the great publicity for Gimbel's, and the net proceeds were sent to Amundsen, while the gullible public who wrote post cards addressed to themselves on the strength of their confidence in the good judgment of the Navy and Gimbel's will wait a long time to receive their cards returned via the Pole. There is an old New England principle that ought to be remembered in connection with Amundsen's periodic attempts to have Americans finance his ventures. It runs to the effect that if a man gets the worst of a trade once, nobody can be blamed, but if the same man gets the better of him again—he has no one to blame but himself. This is the second time Captain Amundsen has failed to carry out his plan to plant the Norwegian flag on the North Pole, with considerable support from the United States. We hope that it will be the last. If the Polar region is worth flying over, we have our own planes and our own pilots who can do it.

* * * *

Now that the Democratic Party has also included a plank favoring the encouragement of aviation, it is to be hoped that some progress will be made along these lines after election. Hope seems to spring eternal in the breast of the flying fraternity, so it is not without the usual optimism that we look forward to the time when the Republican and Democratic party pledges will be redeemed in a very practical manner.—L.D.G.

A Suggested National Air Policy

That a National Aviation Policy is needed by the United States is obvious. To get such a policy in concrete form AVIATION *requested several thoughtful friends of aeronautical progress to make suggestive and constructive recommendations. Some of them are given below and will be printed each week with additions, omissions and such other changes as appear to be helpful toward the formulation of a sound national air policy. Readers of* AVIATION *and others can render no greater service to the cause of aeronautical progress than contributing their comments and suggestions.*

GOVERNMENTAL.

A continuing program of aircraft development both governmental and commercial.

A civilian, charged with championing a national air policy, is needed in the Government.

Aircraft committees in the House and Senate to hold aircraft hearings where civilians as well as government officials can express their opinions.

A detailed aircraft budget for all Governmental Departments, and an annual statement of all expenditures.

An experienced staff of flying officers at the head of all governmental air defense services.

Coordination of all procurement and experimental aircraft work of the government under one agency.

Limitation of government manufacture to repair of aircraft and specialized work that cannot be done by private firms.

The elimination of the duplication of aerial functions and facilities by government departments.

A country wide Air Mail system of trunk lines connecting the principal cities of the country.

Establishment of a National Airway System through cooperation of the Federal Government with States and Cities.

A national aircraft law that will regulate aviation, administered by practical pilots and experienced aeronautical engineers.

Membership of the United States in the International Convention for Air Navigation.

COMMERCIAL AIRCRAFT OPERATION.

Creation of commercial air lines by private enterprise or government subsidy.

Encouragement of participation by private companies in aircraft races and competitions.

Encouragement of the training of pilots by civilian schools.

Creating an Esprit de Corps among flying men all over the country by frequent gatherings at aviation meets.

INDUSTRIAL AIRCRAFT CONSTRUCTION.

Recognition that a sound aeronautical industry is a prime necessity of our National Defense.

An active industrial association that will coordinate the aircraft industry and defend it from attack.

Encouragement of the designing of new types of aircraft by manufacturers by allowing them to retain their proprietory rights.

Concentration of manufacturing firms on specialized types of army and navy aircraft.

Encouragement of research by constructors, universities and other agencies as well as by the government.

Encouragement of an annual design competition for commercial aircraft.

CIVILIAN.

A national aeronautical organization composed of public spirited citizens that will take a strong position of leadership on national aeronautical policy.

An Annual Aviation Week during which the country will think of aerial progress.

The formation of local aero clubs by fliers for the purpose of stimulating flying in all localities.

Encouraging the public to fly and patronize the air mail and transport facilities.

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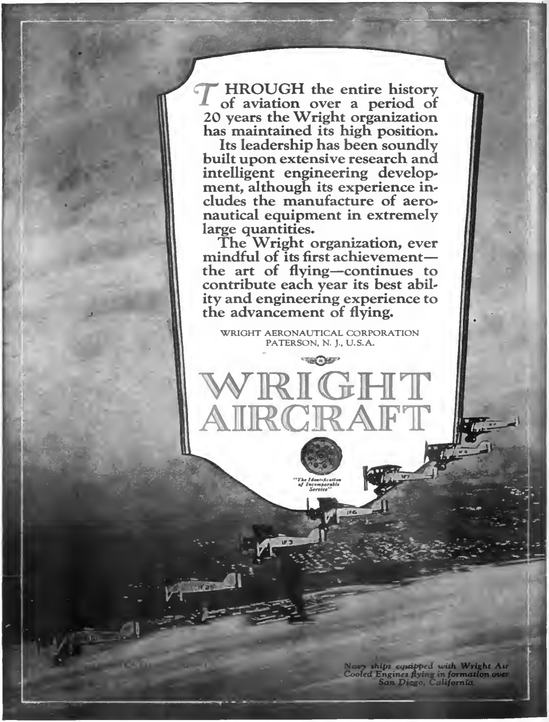

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